

Such a reduction of ethanol cost is entirely plausible for two reasons. First, a simple comparison of energy content reveals that a dry ton of biomass crops—\$40 is a reasonable current average cost—is comparable to oil at \$10–13 a barrel. Agricultural wastes, in many cases, are considerably cheaper than either: many are free or have negative cost. So the overall costs of cellulosic biomass are likely to at least be in the same ballpark as those of crude oil. Second, further reductions in the cost of processing seem quite achievable. The current cost of processing ethanol is significantly higher than the equivalent price per barrel for oil. But this discrepancy reflects the maturity and sophistication of the petroleum industry, developed over the past century, as compared to the fledgling biofuels effort. Producing ethanol is not inherently more complex than refining petroleum—in fact, just the contrary. The world has simply invested far more effort in the latter.

JUMP-START

While the private sector will provide the capital and motivation to move toward ethanol, the federal government has a vital role to play. Market forces seldom reflect national security risks, environmental issues, or other social concerns. The private sector often cannot fund long-term research, despite its demonstrated potential for dramatic innovation. Hence, the federal government must increase its investment in renewable energy research, particularly in innovative programs such as genetic engineering of biocatalysts, development of dedicated energy crops, and improved processing. The very small sums previously invested by the Departments of Energy and Agriculture have already spawned dramatic advances. Every effort should be made to expand competitive, merit-based, and peer-reviewed science and to encourage research that cuts across scientific disciplines.

Research is essential to produce the innovations and technical improvements that will lower the production costs of ethanol and other renewable fuels and let them compete directly with gasoline. At present, the United States is not funding a vigorous program in renewable technologies. The Department of Energy spends under two percent of its budget on renewable fuels; its overall work on renewable technologies is at its lowest level in 30 years. Because private investment often follows federal commitment, industrial research and development has also reached new lows. These disturbing trends occur at a time of national economic prosperity when America has both time and resources for investing in biofuels. The United States cannot afford to wait for the next energy crisis to marshal its intellectual and industrial resources.

Research alone will not suffice to realize cellulosic ethanol's promise. The federal government should also modify the tax code to spur private investment. The existing renewable alcohol tax credits have recently been extended by Congress through 2007—which will help the growth for the new biofuels industry and offer some protection in the transition from grain to cellulosic biomass. But the tax credit structure should facilitate the gradual adoption of cellulosic ethanol—in time, it should not need subsidies. Government incentives to produce FFVs should also be increased.

Finally, there must be a coordinated effort across the many different federal agencies that oversee government laboratories and regulatory agencies. The analogy to the semiconductor industry is instructive. In 1987, Congress authorized the creation of a government-industry partnership, the Semiconductor Manufacturing Technology Asso-

ciation (SEMATECH). Under the direction of the Department of Defense's Advanced Research Projects Agency, SEMATECH pursued fundamental research in semiconductor components and manufacturing processes. Private firms with innovative ideas were encouraged to devote research dollars to transform the idea into a commercial reality. The few domestic semiconductor manufacturers were brought together in forums where the companies could discuss technical hurdles without sacrificing competitive advantage. Today, the success of SEMATECH is evident, as the high-technology sector demonstrates. Biofuels offer a similar opportunity.

Cellulosic ethanol is a first-class transportation fuel, able to power the cars of today as well as tomorrow, use the vast infrastructure already built for gasoline, and enter quickly and easily into the transportation system. It can be shipped in standard rail cars and tank trucks and is easily mixed with gasoline. Although somewhat lower in energy content, it has a substantially higher octane rating than gasoline, allowing for more efficient combustion. It can radically reduce the emission of global warming gases, help reduce the choking smog of our cities, and improve air quality. It is far less toxic than petroleum, far less likely to explode and burn accidentally, and far simpler physically and chemically, making possible simpler refining procedures. If a second Exxon Valdez filled with ethanol ran aground off Alaska, it would produce a lot of evaporation and some drunk seals.

Our growing dependence on increasingly scarce Middle Eastern oil is a fool's game—there is no way for the rest of the world to win. Our losses may come suddenly through war, steadily through price increases, agonizingly through developing-nation poverty, relentlessly through climate change—or through all of the above. It would be extremely short-sighted not to take advantage of the scientific breakthroughs that have occurred and that are in the offing, accelerate them, and move smartly toward ameliorating all of these risks by beginning to substitute carbohydrates for hydrocarbons. If we do, we will make life far less dangerous and far more prosperous for future generations. If we do not, those generations will look back in angry wonder at the remarkable opportunity that we missed.

IDENTIFYING THOSE KILLED IN OPERATION ANACONDA, AND URGING AMERICANS TO FULLY SUPPORT THE REBUILDING OF AFGHANISTAN

The SPEAKER pro tempore (Mr. SCHAFER). Under a previous order of the House, the gentlewoman from Texas (Ms. JACKSON-LEE) is recognized for 5 minutes.

Ms. JACKSON-LEE of Texas. Mr. Speaker, having just returned from Afghanistan just a few hours ago, being on the ground and visiting with the military personnel, serving and dedicating themselves to freedom, I thought it was appropriate to come to the floor of the House to acknowledge the cause upon which we fight, and to call the names of those in the last 72 hours who have lost their lives:

In the Army, Sergeant Bradley Crose, 27; Sergeant Philip J. Svitak, 31; Specialist Marc A. Anderson, 30; Private Matthew A. Commons, 21.

In the Navy, First Class Neil C. Roberts, 32;

In the Air Force, Tech Sergeant John A. Chapman, 36; Senior Airman Jason D. Cunningham, 26.

And in the last 72 hours, as well, Army Chief Warrant Officer Stanley L. Harriman, 34.

It should be recognized that the American people love freedom and they love their values of democracy and justice. Those young men and women that we visited with likewise love those values and fight for them. To them I pay great tribute this evening.

I say to the American public that we must look at their battle that is continuing as we speak as a battle for the recapturing, if you will, of the virtues of democracy and justice and freedom and equality for the people of Afghanistan.

As we traveled the one road they had and saw the conditions of their major cities, and looked at the frighteningly poor people with no food and 97 percent illiteracy in their women, and thousands of children living in orphanages and burned-out and bombed-out buildings, it did not occur because of the American influence of the last couple of months, but because of the 23 years of war.

It is important for America to understand that if we are to fight terrorism and win, we must rebuild Afghanistan, its systems of government, its love for freedom, its economic structure. That must be the war we must fight.

I will take to the floor of the House to tell Members what I saw: The conditions of women, the conditions of the people who lived there. There is no agriculture and no food. Hospital units that I visited had malnourished babies and children because there is no food.

So as Chairman Karzai has said, Afghanistan would have been in hell if it had not been for the brave men and women that are fighting there today. But as we fight to rid it of the last vestiges of terrorism, let us not be fearful of investing dollars, so they might not only love freedom, but they may act upon freedom.

Again, I will share with the Members how the women still wear burqas and that there is no system of equality of rights for women. But we must never undermine those young men and women who fight and stand side by side because they believe in those values and virtues that we cling to in this Nation.

Hopefully, we will realize as Americans that what we fight most of all for, what should be the end result, is peace, not only in central Asia but peace in the Mideast; and the only way we can secure peace is if we engage in diplomacy and begin to put into structure constitutional rights and privileges: equality, justice, and democracy.

Mr. Speaker, we have a lot to learn, but the one thing we know today is that brave men and women offered their lives so we might be free, and others around the world.